



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/997,586	11/28/2001	Paul D. Franzon	5051-575	6227

20792 7590 04/21/2004

MYERS BIGEL SIBLEY & SAJOVEC
PO BOX 37428
RALEIGH, NC 27627

EXAMINER

LEE, HSIEN MING

ART UNIT	PAPER NUMBER
----------	--------------

2823

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/997,586	Applicant(s) FRANZON ET AL.	
	Examiner Hsien-Ming Lee	Art Unit 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 75-77 and 90-116 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 111, 113 and 115 is/are allowed.
- 6) ☒ Claim(s) 75, 77, 91-95, 97, 99-103, 105, 107-110, 112, 114 and 116 is/are rejected.
- 7) ☒ Claim(s) 76, 90, 96, 98, 104 and 106 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Remarks

1. Claims 75-77 and 90-116 are pending in the application.
2. The objection to specification and 102(e) rejection are withdrawn.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 112, 114 and 116 are rejected under 35 U.S.C. 102(b) as being anticipated by Knight et al. (US 5,629,838).

In re claims 112 and 116, Knight et al. teach the claimed electrical connector (Fig.30) comprising:

- a first mating connector substrate 11 including a first mating connector face;
- a first array of inductors 14b on the first mating connector face;
- a second mating connector substrate 10 including a second mating connector face;
- a second array of inductors 15a on the second mating connector face; and
- a current mode driver (col. 45, lines 54-57) that is coupled to at least one of the inductors in the first and/or second arrays of inductors 14b and 15a;
- the first 11 and second 10 mating connector substrates being configured to maintain the first and second mating connector faces in closely spaced apart relation to provide

Art Unit: 2823

inductive coupling between corresponding inductors in the first and Second arrays of inductors.

In re claim 114, Knight et al., in Fig. 22, also teach the claimed electrical connector part comprising:

- a first mating connector substrate 404 including a first mating connector face;
- a first array of inductors on the first connector mating face;
- a mechanical interface (i.e. solder balls, such as 188 in Fig.20B) that is configured to maintain the first mating connector face in closely spaced apart relation to a second mating connector face having a second array of inductors thereon, to provide inductive coupling between corresponding inductors in the first and second arrays of inductors; and
- a current mode driver (col. 45, lines 54-57) that is coupled to at least one of the inductors in the first array of inductors.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 75, 77, 91-95, 97, 99-103, 105 and 107-110 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knight et al. (US 5,629,838).

In re claims 75, 77, 93-95, 97, 99-103, 105 and 107-110, Knight et al., in Figs. 30, 35 and related text, teach the claimed electrical connector comprising:

Art Unit: 2823

- a first mating connector substrate 11 including a first mating connector face (i.e. a top surface of 11);
- a first array of inductors 14b (i.e. half-capacitor) on the first mating connector face;
- a second mating connector substrate 10 including a second mating connector face (i.e. a bottom surface of 10);
- a second array of inductors 15a (i.e. another half-capacitor) on the second mating connector face;
- the first 11 and second 10 mating connector substrates being configured to fixed and separately maintain the first and second mating connector faces in closely spaced apart relation to provide inductive AC coupling between at least one pair of corresponding inductors in the first and second arrays of inductors 14b and 15a, wherein the first and the second arrays of inductors 14b and 15a also include capacitance associated therewith because they are capacitor.

Knight et al further teach that the teachings do not require DC coupling across the coupled half-capacitor (col. 24, lines 22-23). Therefore, it would have been obvious to one of the ordinary skill in the art, at the time the invention was made, to comprehend that Knight et al. also teach the electrical connector would prevent DC coupling, since the DC coupling is absent in Knight's connector.

In re claim 91, Knight et al. also teach comprising a current mode driver that is coupled to at least one of the inductors in the first and/or second arrays of inductors (col. 45, lines 54-57).

In re claim 92, Knight et al. also teach comprising a first mutual inductance coupling element (i.e. a capacitor dielectric between 14b and 15a, such as 17 in Fig.2) on at least one of the

Art Unit: 2823

inductors in the first array of inductors and a second mutual inductance coupling element on a corresponding at least one of the inductors in the second array of inductors.

Allowable Subject Matter

7. Claims 111, 113 and 115 are allowed.
8. Claims 76, 90, 96, 98, 104 and 106 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record at least neither teaches nor suggests the electrical connector comprises a *DC offset compensating receiver* that is coupled to at least one of the inductors in the first and/or second arrays of inductors (claims 90, 98, 106, 111, 113, 115).

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2823

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hsien-Ming Lee whose telephone number is 571-272-1863. The examiner can normally be reached on M-F (9:00 ~ 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 571-272-1855.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hsien-Ming Lee
Examiner
Art Unit 2823

April 16, 2004

Hsien Ming Lee 4/16/04